U.S. Patent Application Serial No.: 10/643,083

Attorney Docket No.: 37629-0077

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re patent application of

Confirmation No. 3061

Plueckthun et al.

Serial No.: 10/643,083

Group Art Unit: 2143

Filed: August 19, 2003

Examiner: (Unassigned)

For:

NOVEL METHODS FOR OBTAINING, IDENTIFYING AND APPLYING NUCLEIC ACID SEQUENCES AND (POLY)PEPTIDES WHICH INCREASE THE EXPRESSION YIELDS OF PERIPLASMIC PROTEINS IN FUNCTIONAL

FORM

INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §1.56 and 37 CFR §1.97

Commissioner for Patents P. O. Box 1450 Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08A is a listing of documents known to applicants in order to comply with applicants' duty of disclosure pursuant to 37 C.F.R. §1.56.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or is considered to be material to patentability as defined in 37 C.F.R. §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* prior art reference against the claims of the present application.

The documents submitted herewith on Form PTO/SB/08A, lists the documents cited by or submitted to the Patent Office in parent application Serial No. 09/564,351, filed May 1, 2000.

As provided in 37 C.F.R. § 1.98(d), copies of the documents are not being provided since they were previously cited by or submitted to the Patent Office in parent application Serial No. 09/564,351, filed May 1, 2000.

U.S. Patent Application Serial No.: 10/643,083 Attorney Docket No.: 37629-0077

The instant Information Disclosure Statement is being filed in compliance with 37 CFR §1.97(b) prior to the mailing date of the first official action, therefore, no fee is required in connection with its filing. However, the Commissioner is hereby authorized to charge any deficiency or to credit any overpayment to Deposit Account No. 08-1641.

Applicants respectfully request that the listed documents be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO-SB/08A be returned in accordance with M.P.E.P. §609.

Respectfully submitted

1-14-04

Paul M. Booth Reg. No. 40,244

Customer ID No. 26633
HELLER EHRMAN WHITE & McAULIFFE
1666 K Street, NW, Suite 300
Washington, DC 20006-1228
(202) 912-2000 (telephone)
(202) 912-2020 (telecopier)

Substitute for form 1449A/PTO

Sheet

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary) 5

of

Complete if Known					
Application Number	10/643,083				
Filing Date	August 19, 2003	_			
First Named Inventor	Andreas PLUECKTHUN et al.				
Group Art Unit	2143				
Examiner Name	Unassigned				
Attorney Docket Number	37629-0077	_			

-	U.S. PATENT DOCUMENTS					
		U.S. Patent Document		Name of Patentee or Applicant	Date of Publication of	Pages, Columns, Lines, Where
Examiner Initials *	Cite No.1	l Number	Kind Code ² (if known)	of Cited Document	Cited Document MM-DD-YYYY	Relevant Passages or Relevant Figures Appear
	A01	5,246,838		Van Dijl et al.	9/1993	
	ŀ					
_						
	ļ					

	FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. ¹	Foreig Office ³	gn Patent Docu Number ⁴	Ment Kind Code ⁵ (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ₆
	A02	WIPO	97/38123			10/16/1997		
								-
						,		
							-	

Examiner Signature	Date Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). 4 For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁸ Applicant is to place a check mark hee if English language Translation is attached.

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

2

Sheet

NFORMATION DISCLOSURE TATEMENT BY APPLICANT

(use as many sheets as necessary)

of

5

Complete if Known					
Application Number	10/643,083				
Filing Date	AUGUST 19, 2003				
First Named Inventor	Andreas PLUECKTHUN et al.				
Group Art Unit	2143				
Examiner Name	Unassigned				
Attorney Docket Number	37629-0077				

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T 2
	A03	Missiakas et al., Molecular Microbiology 21(4):871-884 (1996)	
	A04	Wall et al., Current Opinion in Biotechnology 6:507-516 (1995)	
	A05	Aasland, R. et al., "Identity of the 17-Kilodalton Protein, a DNA-Binding Protein from Esoherichia coil, and the firA Gene Product," Journal of Bacteriology, 170, 5916-5918 (1988)	
	A06	Bardwell, J. C. A. et al., "Building Bridges: Disulphide Bond Formation in the Cell," Molecular Microbiology, 14, 199-205 (1994)	
	A07	Bothmann, H. et al., "Selection for a Periplasmic Factor Improving Phage Display and Functional Periplasmic Expression," Nature Biotechnology, 16, 376-380 (1998).	
	A08	Buchner, J., "Supervising the Fold: Functional Principles of Molecular Chaperones," 10, 10-19 (1996)	
	A09	Chen, R. et al., "A Periplasmic Protein (Skp) of Escherichia Coli Selectively Binds a Class of Outer Membrane Proteins," Molecular Microbiology, 19,1287-1294 (1996)	
	A10	Delamarche, C. et al., "Characterization of the Pasteurella multocida skp and firA Genes," Gene, 161, 39-43 (1995)	
	A11	Dunn, I. S., "Phage Display of Proteins," Current Opinion Biotechnoloiqy, 7, 547-553 (1996)	
	A12	Fleischmann, R. D. et al., "Whole-Genome Random Sequencing and Assembly of Haemophilus influenzae Rd," Science, 269, 496-512 (1995)	
	A13	Geyer, R. et al., "A Lipopolysaccharide-Binding Cell-Surface Protein from Salmonella minnesota. Isolation, Partial Characterization and Occurrence in Different Enterobacteriaceae," Eur. J. Biochem., 98, 27-38 (1979).	
,	A14	Gill, S. C. et al., "Calculation of Protein Extinction Coefficients from Amino Acid Sequence Data," Analytical Biochemistry, 182, 319-326 (1989)	
	A15	Hirvas, L. et al., "Bacterial 'Histone-Like Protein I' (HLP-I) is an Outer Membrane Constituent?," FEBS Lett., 262, 123-126 (1990)	

Examiner	Date	
Signature	Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Complete if Known 10/643,083 AUGUST 19, 2003

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO	
INCODMATION DIGGLOCUDE	Application Number
INFORMATION DISCLOSURE	Filing Date
STATEMENT BY APPLICANT	First Named Inventor
5)	Group Art Unit

(use as many sheets as necessary) 3

Andreas PLUECKTHUN et al. 2143 **Examiner Name** Unassigned Attorney Docket Number 37629-0077

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
	A16	Hirvas, L. et al., "The ompH Gene of Yersinia enterocolitica: Cloning, Sequencing, Expression, and Comparison with Known Enterobacterial ompH Sequences," Journal of Bacteriology, 173, 1223-1229 (1991)	
	A17	Holck. A, et al., "Cloning and Sequencing of the Gene for the DNA-binding 17K Protein of Escherichia coil," Gene., 67, 117-124 (1988)	
	A18	Hottenrott, S. et al., "The Escherichia coil SlyD Is a Metal Ion-regulated Peptidyl-prolyl cis/trans Isomerase," The Journal of Biological Chemistry, 272, 15697-15701 (1997)	
	A19	Jung, S. et al., "Improving in vivo Folding and Stability of a Single-Chain Fv Antibody Fragment by Loop Grafting," Protein Engineering, 10, 959-966 (1997)	<u> </u>
	A20	Knappik, A. et al., "The Effect of Folding Catalysts on the In Vitro Folding Process of Different Antibody Fragments Expressed in Escherichia Coli," Bio. Technology, 11, 77-83(1993)	_
	A21	Knappik, A. et al., "Engineered Turns of a Recombinant Antibody Improve its in vivo Folding," Protein Engineering, 8, 81-89, (1995)	-
	A22	Koski, P. et al., "Complete Sequence of the ompH Gene Encoding the 16-kDa Cationic Outer Membrane Protein of Salmonella typhimurium," Gene, 88, 117-120 (1990)	
	A23	Koski, P. et al., "Isolation, Cloning, and Primary Structure of a Cationic 16-kDa Outer Membrane Protein_of_Salmonella_typhimurium," The Journal of Biological Chemistry, 264,18973-18980 (1989)	
	A24	Krebber, A. et al., "Reliable Cloning of Functional Antibody Variable Domains from Hybridomas and Spleen Cell Repertoires Employing a Reengineered Phage Display System," Journal of Immunological Methods, 201, 35-55 (1997)	
E 101 E1	A25	Krebber, C. et al., "Selectively-Infective Phage (SIP): A Mechanistic Dissection of a Novel in vivo Selection for Protein-Ligand Interactions," J. Mol. Biol., 268, 607-618 (1997)	
	A26	Martin, J. et al., "Chaperone-Assisted Protein Folding," Current Opinion in Structural Biology, 7, 41-52 (1997)	
	A27	Missiakas, D. et al., "Protein Misfolding in the Cell Envelope of Escherichia coil: New Signaling Pathways," Trends Biochem Sci., 22, 59-63 (1997)	

Examiner	Date	
Signature	 Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO Complete if Known **Application Number** 10/643,083 INFORMATION DISCLOSURE Filing Date AUGUST 19, 2003 TATEMENT BY APPLICANT Andreas PLUECKTHUN et al. First Named Inventor Group Art Unit 2143 (use as many sheets as necessary) **Examiner Name** Unassigned Sheet 4 of 5 Attorney Docket Number 37629-0077

		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	A28	Missiakas, D. et al., "New Components of Protein Folding in Extracytoplasmic Compartments of Escherichia coil, SurA, FkpA and Skp/O\ompH," Molecular Microbiology, 21, 871-884 (1996)	
	A29	Nieba, L. et al., "BIACORE Analysis of Histidine-Tagged Proteins Using a Chelating NTA Sensor Chip," Analytical Biochemistry, 252, 217-228 (1997).	
	A30	Proba, K. et al., "A Natural Antibody Missing a Cysteine in VH: Consequences for Thermodynamic Stability and Folding," J. Mol. Biol., 265, 161-172 (1997)	
	A31	Proba, K. et al., "Antibody scFv Fragments Without Disulfide Bonds Made by Molecular Evolution " J.Mol. Biol., 275, 245-253 (1998)	
	A32	Roof, W.D. et al., "slyD, a Host Gene Required for ΦX174 Lysis, Is Related to the FK5O6-binding Protein Family of Peptidyl-prolyl cis-trans-Isomerases," The Journal of Biological Chemistry, 269, 2902-2910 (1994)	
	A33	Roof, W.D. et al., "Mutational Analysis of slyD, an Eschenchia coli Gene Encoding a Protein of the FKBP Immunophilin Family," Molecular Microbiology, 25, 1031-1046 (1997)	
	A34	Skerra, A. et al., "Assembly of a Functional Immunoglobulin Fv Fragment in Escherichia coli," Science, 240, 1038-1041(1988)	
	A35	Smith, G.P., et al., "Libraries of Peptides and Proteins Displayed on Filamentous Phage," Methods in Enzymology, 217, 228-257 (1993)	
	A36	Söderlind, E. et al., "Chaperonin Assisted Phage Display of Antibody Fragments on Filamentous Bacteriophages," Bio/Technology, 11, 503-506 (1993)	
	A37	Szabo, A. et al., "The ATP Hydrolysis-Dependent Reaction Cycle of the Escherichia Coil Hsp70 System-DnaK, DnaJ, and GrpE," Proc. Natl. Acad. Sci. U.S.A., 91, 10345-10349 (1994)	
	A38	Thome, B.M. et al., "Skp is a Periplasmic Escherichia coil Protein Requiring SecA and SecY for Export," Molecular Microbiology, 5, 2815-2821 (1991)	
	A39	Thome, B.M. et al., "A Protein with Sequence Identity to Skp (FirA) Supports Protein Translocation Into Plasma Membrane Vesicles of Escherichia coil," FEBS Lett., 269, 113-116 (1990)	
-	A40	Vaughan, T.J. et al., "Human Antibodies with Sub-nanomolar Affinites Isolated from a Large Non-Immunized Phage Display Library," Nature Biotechnology, 14, 309-314 (1996)	

Examiner	Date
Signature	 Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.

Complete if Known

Approved for use through 10/31/2002. OMB 0651-0031
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number

Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number 10/643,083 Filing Date AUGUST 19, 2003 Andreas PLUECKTHUN et al. First Named Inventor Group Art Unit 2143 **Examiner Name** Unassigned

(use as many sheets as necessary)

Sheet 5 of 5 Attorney Docket Number 37629-0077

<u></u>			
		OTHER PRIOR ART NON PATENT LITERATURE DOCUMENTS	
Examiner Initials *	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	A41	Virnekäs, B. et al., "Trinucleotide Phosphoramidites: Ideal Reagents for the Synthesis of Mixed Oligonucleotides for Random Mutagenesis," Nucleic Acids Research, 22, 5600-5607 (1994)	
	A42	Wall, J.G. et al., "Effects of Overexpressing Folding Modulators on the in vivo Folding of Heterologous Proteins in Eschichia coil," Current Opinion in Biotechnology, 6, 507-516 (1995)	
	A43	Whitlow, M. et al., "1.85 A Structure of Anti-Fluorescein 4-4-20 Fab," Protein Engineering, 8, 749-761 (1995)	

Examiner	Date	
Signature	Considered	

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² Applicant is to place a check mark here if English language Translation is attached.